

MULTIMEDIA



UNIVERSITY

STUDENT ID NO

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# MULTIMEDIA UNIVERSITY

## FINAL EXAMINATION

TRIMESTER 2, 2017/2018

**BFN2094 – CORPORATE RISK MANAGEMENT**  
( All sections / Groups )

8<sup>th</sup> MARCH 2018  
9.00 a.m – 11.00 a.m  
( 2 Hours )

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### INSTRUCTIONS TO STUDENTS

1. This question paper consists of FOUR (4) printed pages with four (4) questions only.
2. Attempt ALL questions.
3. Please write all your answer in the **Answer Booklet** provided.
4. Marks are shown at the end of each question.

**Question 1 (25 Marks)**

- (a) Assume that you are part of a risk management team in Success Bhd. The team is currently working on developing a risk management strategy to deal with potential losses from a fire that would damage its main manufacturing plant in Klang.

- i. Describe the possible *direct and indirect losses* to a business from a fire that damages a manufacturing plant.

**(6 marks)**

- ii. What are the major methods that are used to finance losses? Which of the loss financing method would you recommend to the management as the main risk management strategy in this case?

**(4 marks)**

- (b) Describe specific factors included in the cost of risk for the risk that workers in a manufacturing plant will be injured by machines and equipment. Please include specific examples for each of the components of costs of risk.

**(15 marks)****Question 2 (25 Marks)**

- (a) Suppose Mekar Manufacturing owns real estate valued at RM500,000. They estimate that their property losses have the following distribution:

Loss Equals	RM500,000	with probability 0.001
	RM100,000	with probability 0.010
	RM25,000	with probability 0.050
	RM1,000	with probability 0.100
	RM0	with probability 0.839

- i. What is the expected value of Mekar Manufacturing's losses?

**(3 marks)****Continued...**

- ii. If insurance for this loss were available for a price of RM2,000 per year, do you think that Mekar would want to buy it? Why or why not?

(2 marks)

- (b) Explain how a pooling arrangement reduces the risk for each participant when losses are uncorrelated. Does pooling reduce the expected cost paid by each participant? Explain.

(4 marks)

- (c) Suppose Fatin and Aina enter into a pooling arrangement. Assume that both women have the following loss distributions and that losses are independent.

Possible outcomes ( $x_i$ )	Probability ( $p_i$ )
RM 0	0.8
RM 2,500	0.2

- i. Compute the expected loss before risk pooling.

(2 marks)

- ii. Prepare a probability distribution table after the risk pooling.

(4 marks)

- iii. What happens to the *expected loss* and *standard deviation* of the distribution of losses to each individual after the pooling arrangement? Briefly explain.

(4 marks)

- (d) Suppose that each participant in a pooling arrangement has potential losses ranging from RM0 to RM4,000 and that each participant's expected loss is RM1,000. In one graph, sketch the probability distribution of average losses if the losses across participants are independent and if:

- there is 1 participant (i.e., no pooling)
- there are 100 participants
- there are 1,000 participants

(6 marks)

Continued...

**Question 3 (25 Marks)**

- (a) List and briefly describe two different types of insurance company ownership.  
(8 marks)
- (b) Holding more economic capital reduces the risk of insolvency for an insurer. Should insurers hold sufficient capital to reduce insolvency risk to zero? Why or why not.  
(8 marks)
- (c) Bagus Company has the following distribution for its annual liability costs:

Loss =	RM2,000,000	with probability 0.0001
	RM100,000	with probability 0.001
	RM5,000	with probability 0.1
	RM0	with probability 0.8989

- i. What are the expected claim costs for Bagus Company?  
(3 marks)
- ii. If an insurer offered Bagus Company policy with 50% coinsurance, what are the expected claim costs on this policy?  
(3 marks)
- iii. If an insurer offered Bagus Company a policy with an RM5000 annual deductible, what are the expected claim costs on this policy?  
(3 marks)

Continued...

**Question 4 (25 Marks)**

- (a) Suppose an insurer estimates that an exposure has the following loss distribution:

Loss=	RM600,000 with probability 0.01
	RM100,000 with probability 0.02
	RM30,000 with probability 0.03
	RM0 with probability 0.94

Claim payments are not expected to be paid until one year after the premium is received. If the interest rate is 5%, what is the discounted expected claim costs?

**(8 marks)**

- (b) The development and selection of alternative risk management methods involve a fundamental tradeoff between the benefits of retention and the increased costs from greater risk. What are the benefits of increased retention?

**(9 marks)**

- (c) Semangat Company is evaluating a loss control plan. The costs and benefits are as follows (Ignore the implications of possible reduced insurance premiums):

	Today	End of Year				
		Year 1	Year 2	Year 3	Year 4	Year 5
Loss Control Expenditures	RM10,000	RM4,000	0	0	0	0
Reduction in Expected Losses	0	RM3,400	RM3,400	RM3,400	RM3,400	RM3,400

- Using a cost of capital of 6%, what is the present value of the loss control expenditures (rounded to the nearest dollar)?
- Using a cost of capital of 6%, what is the present value of the reduction in expected losses (rounded to the nearest dollar)?
- What decision should Semangat Company make regarding these loss control activities?

**(3 marks)**

**(3 marks)**

**(2 marks)**

**End of Page**